Time Line

New Bedford and National events

1602 Bartholomew Gosnold landed at Smoking Rocks (site of future New Bedford) and reported the presence of a large native population.

1652 Territory of Dartmouth deed conveyed to William Bradford and others by Massasoit and his son Wamsutta. The first settlers were mostly Quakers who emigrated from Portsmouth, Rhode Island, and Plymouth and Taunton, Massachusetts.

1664 Town of Dartmouth received charter. New Bedford, Fairhaven, and Acushnet were originally part of Dartmouth.

1675-76 King Phillip's War. During this Anglo-Native American conflict many of the original homes in Dartmouth were destroyed.

1690 Eleven to 13 families owned land in what is now New Bedford. The early settlers were subsistence farmers. They cleared land, but the amount of land cleared probably had a minimal effect on the harbor.

1755 Economy in New Bedford and Fairhaven was shifting from farming to whaling, ship-building, and import/export trade. First locally owned whaler shipped out of New Bedford.

1765 Joseph Rotch arrived from Nantucket with money and expertise to advance the whale fishery in New Bedford.

1775 40 to 50 whaleships registered in New Bedford.

1775-1783 American Revolution. The British Navy blockaded the American coast so the whale fishery was idle during much of the war.

1778 British burned part of New Bedford during the American Revolution, but the maritime economy was well enough established that the town was rebuilt.

1787 New Bedford incorporated as a town.

1798 First New Bedford-Fairhaven bridge built to improve commercial ties between Bedford village (later New Bedford) on west side of the harbor and Fairhaven and Oxford villages on the east side. The bridge changed the water circulation and sediment deposition patterns in the harbor. Sediment accumulated north of the bridge along the eastern shore at Oxford, and whaleships were no longer able to get to the docks there. Development in Fairhaven village was physically limited by the adjacent farmer's

refusal to sell land for commercial development. Therefore, Bedford village (New Bedford) became the commercial center of the harbor.

1807 Embargo of 1807 halted all trade with Europe and put a damper on the whale fishery.

1812 War of 1812. The British Navy blockaded the American coast so the whale fishery was idle during much of the war.

1807 New Bedford-Fairhaven bridge partially destroyed by wind driven tide.

1815 By 1815, twelve wharves had been built along the New Bedford shoreline. Wharves changed the water circulation and sedimentation patterns in the harbor.

1815 New Bedford-Fairhaven bridge destroyed by hurricane.

1819 New Bedford-Fairhaven bridge rebuilt.

1830s Discovery of huge anthracite coalfields in Pennsylvania supplied high-quality fuel for industrial use. Coal was a plentiful and inexpensive energy source for industry and railroads. (Melosi, 1980). Coal combustion is a source of PAHs, mercury, and arsenic.

1839 New Bedford Harbor first dredged by U.S. Army Corps of Engineers to improve access to docks on New Bedford waterfront.

1848 Wamsutta Mill built in New Bedford. It was the first successful textile mill in the city.

1852 First sewers in New Bedford. These sewer lines were located on east-west streets and drained directly into the harbor.

1857 Peak of whaling in New Bedford. In this year, 329 whaling ships listed New Bedford as home port. Wharves built along the New Bedford shore (22 by 1851) to accommodate the whaling ships caused changes in water circulation and sedimentation patterns in the harbor. Sewage (see 1852) began to accumulate at the ends of the pipes along the New Bedford shore (see 1870).

1857 A nationwide depression caused the prices of whale oil to drop.

1859 Discovery of petroleum in Pennsylvania eliminated the need for whale oil as an illuminant and contributed to the decline of whaling.

1859 Great Richmond and Wilcox Wharf fire in New Bedford. Lumber yards, oil, and many buildings burned.

1860 New Bedford Copper located on the waterfront in New Bedford. This company supplied copper sheathing for ships hulls and other maritime uses. In 1928, it was

bought out by Revere Copper and Brass. Recent studies indicate that copper concentrations in sediments taken from the harbor near the location of this company are very high
(> 1000ug/g dry wt) (Nelson et al., 1996).

1861-1865 Civil War. This war disrupted the economy of the whole nation. During the war, a number of New Bedford whaling ships were lost: 24 ships were filled with rocks and sunk at the entrance to Charleston and Savannah harbors; 28 ships were stopped and burned by the Confederate raiders. This loss of whaling ships contributed to the decline of whaling.

1869 New Bedford Water Works completed. The public supply of water made expansion of the textile industry possible. The number of textile mills went from 2 in 1880, to 35 in 1925.

1869 Great gale destroys New Bedford-Fairhaven bridge, was rebuilt by 1870.

1870 Edward P. Haskill filed a law suit against New Bedford for the large amount of sewage that had accumulated at the end of his dock, causing bad odors and restricting boat access to the dock. He won the suit.

1871 and 1876 Forty-five whaling ships from New Bedford were crushed in the Arctic Ice. This loss of ships contributed to the decline of whaling.

1875-1876 A channel was dredged between the wharves at Fairhaven and the wharves at New Bedford. From 1875 to 1952, the Army Corps of Engineers dredged numerous times to create, widen and deepen, and maintain a shipping channel approaching the harbor and channels, turning areas, and anchorage areas within the harbor. Dredging was done in various areas of the harbor or the approach to the harbor in the following years: 1877-1891, 1893 -1894, 1896-1897, 1899-1900, 1902-1903, 1905-1913, 1916-1917, 1919, 1923, 1927, 1931-1933, 1935-1936, 1938-1940, 1944-1945, 1950, 1952.

1892 Coggeshall Street bridge completed. This bridge serves as the dividing line between what is currently called the upper and lower harbor.

1899 New Bedford Board of Health reported that swimming in the Acushnet River was dangerous to health.

1899-1903 New Bedford-Fairhaven bridge replaced by a steel bridge with a swivel section in middle, between Fish Island and Popes Island. The Fairhaven end of bridge was moved north to Main St.

1900 By 1900, 16 textile mills in New Bedford. Many of these mills were built on wetlands. The loss of these wetlands meant decreased habitat available for resident and migratory species, and decreased nursery areas for aquatic species. The function of these

wetlands, filtering excess nutrients, pollutants, and microorganisms in runoff from the land, and providing erosion control for the shoreline, was also lost.

1900-1903 There were 575 cases of typhoid fever (caused by eating contaminated shellfish) reported in New Bedford.

1904 Massachusetts State Board of Health closed the Acushnet River to shellfishing because of bacterial contamination from sewage.

1909 Model T Ford. This was the start of the automobile era. During the next 20 years, demand for yarns to make tires helped expand the textile industry in New Bedford.

1910 Acushnet Processing located in Acushnet on the shore of upper New Bedford Harbor. This plant reprocessed tires and produced organic and acid waste. In the summer of 1920, these wastes were called "objectionable" in a report on the sanitary condition of the Acushnet River (Kelley, 1921).

1912 Construction of interceptor sewer line started. This interceptor line was to connect sewer lines in New Bedford and deliver the wastes to an outfall located off the end of Clarks Point. (See 1920s below).

1920 By 1920, there were 31 textile mills in New Bedford, and the population of the city had expanded to 121,000. This growth meant a lot more sewage was being emptied into the harbor.

1920s Interceptor sewer line partially completed. Five of nine pumping districts were connected to the interceptor line. Construction was stopped until 1947. The interceptor line lessened the amount of raw sewage emptying into New Bedford Harbor but did not stop it. The sewer system is a combined one, with storm water from streets and wastewater from homes and industries emptying into the same pipes. In periods of heavy rainfall, raw sewage still empties into the harbor through combined sewage overflows (CSOs).

1921 Thomas Midgely of General Motors Research Laboratory found that the addition of tetraethyl lead to gasoline provided an inexpensive way to eliminate engine knock.

1923-1924 Leaded gasoline commercially available.

1925 Textile industry in New Bedford peaked at 35 mills.

1928 Mill workers strike in New Bedford. The strike weakened the economic condition of the mills and contributed to the end of textile manufacture in New Bedford.

1929 Stock market crash. The crash affected the economy in the U.S. and contributed to the end of textile manufacture in New Bedford.

1929 PCBs (polychlorinated biphenyls) first produced. Monsanto Corporation commercially manufactured and sold PCB blends and mixtures (under the trade name Aroclor) in the U.S. from 1929 to 1977.

1930s Great Depression. The Depression affected the economy in the U.S. and contributed to the end of textile manufacture in New Bedford.

1930s Expansion of New Bedford as a commercial fishing port. This expansion continued into the 1980s.

1938 Hurricane damaged boats and waterfront businesses and houses in New Bedford, Fairhaven, and Acushnet.

1939 Aerovox Corp. moved into an empty mill building on the waterfront of upper New Bedford Harbor. From 1947 to 1978, Aerovox used PCBs in the manufacture of electronic capacitors. The plant, land around the plant, sediment in the harbor near the plant, and sewer lines were contaminated with PCBs.

1941 Cornell Dubilier moved into an empty mill building on the east side of Clarks Point. They used PCBs in the manufacture of electronic capacitors.

1954 Hurricane Carol damaged boats, waterfront businesses and houses in New Bedford, Fairhaven, and Acushnet.

1964-1965 Hurricane barrier built. This barrier across entrance of New Bedford Harbor was built to protect the fishing fleet and waterfront businesses from storm damage. The hurricane barrier probably affected sedimentation rates and patterns, water residence times, and circulation patterns in the harbor. (Abdelrhman, 2000)

1968 Concern about PCBs in the environment first noted by a Swedish scientist (Weaver, 1984).

1969 Fairhaven Wastewater Treatment Facility, with secondary treatment of waste, was built. The discharge is into lower New Bedford Harbor.

1973 Beginning of phase out of leaded gasoline. Unleaded gasoline available.

1974 Route I 195 bridge built across Acushnet River (just south of the Coggeshall St. bridge)

1974 New Bedford Sewage treatment plant completed (primary treatment). Outfall is off the end of Clarks Point. But during periods of heavy rainfall, raw sewage still enters the harbor through the combined sewer overflows (CSOs).

1976 Presence of PCBs in New Bedford Harbor documented by researchers.

1978 U.S. EPA bans the sale of PCBs.

1979 Massachusetts Department of Public Health closed New Bedford Harbor to taking of all fish and shellfish because of residues of PCBs found in fish and clams.

1982 New Bedford Harbor placed on National Priorities List for cleanup under Superfund legislation.

1984 Port of New Bedford ranked number one in nation based on value of fish landed.

1987 Industrial pretreatment program in effect in New Bedford. Industries required to pretreat wastes before discharging into the sewer.

1994-1995 Army Corps of Engineers dredged about 14000 cubic yards of PCB-contaminated sediment spread over about 5 acres of upper New Bedford Harbor.

1996 A new New Bedford Wastewater Treatment Facility, with secondary treatment of waste, was completed.

1996 Leaded gasoline prohibited.

Public Health and Legislative

1833 Water closet (toilet) patented in the U.S. Use of water closets in homes without sewers quickly became public health problems. The increased use of water caused privy vaults and cesspools to overflow and the surrounding soil to become saturated with foul smelling, contaminated water.

1850s -1860s "Filth theory" of disease widely accepted. Disease was thought to be caused by impure air from putrefied organic material, including human and animal excrement, rotting garbage, and vapors from swamps and stagnant pools. Emphasis was put on collecting garbage, emptying cesspools and privy vaults, cleaning streets, and filling in wetlands. The importance of wetlands, to filter pollutants, excess nutrients and harmful microorganisms, provide habit, and serve as nursery areas for aquatic species, was not recognized at this time. In cities, sewer lines were installed to carry waste away. It was common for sewer lines to empty directly into nearby waterways. (Tarr, 1985a)

1876 Massachusetts Board of Health commissioned James P. Kirkwood, a water quality specialist and civil engineer, to examine the rivers in Massachusetts. He found that the fluid refuse from some factories could be poisonous, and warned that although some wastes and sewage may not be detected in great quantities, they may make the water "not merely repulsive or suspicious, but more or less dangerous for family use." (Tarr, 1985b)

1878 First U. S. state law controlling stream pollution. This Massachusetts law gave the State Board of Health the power to control river pollution caused by manufacturing waste (Rosenkrantz, 1972).

1870s-1880s Albert Leeds, a geologist, tested the water of the Passaic River, New Jersey (the drinking water supply for Newark and Jersey City, NJ) and found that factories along the lower stretch of the river had polluted it with acids, dyes, and chemicals (Leeds, 1887).

1880 By this time, most cities with a population greater than 30,000 had a board of health, a health commission, or a health officer. Most cities had statutes restricting "noxious" manufactures to the fringes of cities.

1890s By this time, the "germ theory," which stated disease was caused by bacteria, was accepted. Acceptance of the "germ theory" put the focus on human wastes, with less concern on industrial wastes. Public health officials shifted their concern to diseases and away from environmental sanitation. Many municipalities transferred control of refuse collection and disposal from health departments to sanitation or public works departments. Removal of wastes was now considered an engineering problem, and cost and efficiency of removal became the major issues. (Tarr, 1985a,b)

1899 **Refuse Act of 1899** - prohibited discharge of any refuse into navigable waters to protect navigation in rivers and coastal waters. The Secretary of the Army would allow discharge if, in the judgement of the Chief of Engineers, anchorage and navigation was not affected, but a permit was necessary.
http://www.epa.gov/win/law.html

1908 Chlorination of drinking water to kill bacteria. Sand and mechanical filtration of drinking water had been used in some cities since 1897. (Tarr, 1985b)

1900 - 1920s *Public Health:* The question of pollution in waterways was raised by some individuals working for various public agencies, however, little was done. There was a reluctance to enforce the existing regulations because they might limit industrial growth. In most states, pollution problems were handled by the department of health, whose primary concern was disease. For a comprehensive discussion of these early efforts see Tarr, 1985b.

However, there was some interest in contamination. In 1903, the USGS organized a Division of Hydro-economics to investigate the value of water supplies, with particular concern for turbidity, color, hardness, and various chemicals and minerals that would reduce water quality. Marshall Leighton, who headed the division, thought industrial wastes were the "great pollution problem of today".

The American Public Health Association (APHA) created several committees on waste disposal: Committee on Trade Waste Disposal (1902); Committee on Sanitary Control of Waterways (1916); and Committee on Disposal of Sewage and Industrial Wastes (1927).

1913 At the request of Congress, the Public Health Service started a significant effort to investigate water-borne diseases, because the state health departments were not taking effective action. A team of sanitary engineers, chemists, biologists, bacteriologists, and medical officers worked in Cincinnati at what was to become the Public Health Service's Center for Pollution Studies.

1900-1920s *Legislative:* Several industrialized states (Pennsylvania, Connecticut, Massachusetts, Ohio) passed legislation concerning pollution of rivers. But the state boards did not insist on absolute prohibition and exempted certain rivers. The state boards thought the solution to pollution was through cooperation with industry. The function of the state boards was to supply technical advise to industries.

- 1906 Massachusetts passed legislation to eliminate pollution, but the State Board of Health had to advise the industry of the best way to do that.
- 1917 Pennsylvania passed a law which prohibited discharge of any matter harmful to fish into streams. However, in 1923, certain rivers and industries were exempted from the 1917 law. Pennsylvania Sanitary Water Board established three classes of streams: 1) relatively clean, 2) streams where pollution needed to be controlled, and 3) streams, rated "c", that were so polluted that it was not necessary to clean them up.
- 1925 Connecticut created a State Water Commission that had the power to eliminate pollution, but must prescribe the methods.

1922 American Water Works Association (AWWA) Committee on Industrial Wastes in Relation to Water Supply presented a report that industrial pollutants had damaged at least 248 water supplies in the US and Canada.

1924 **Oil Pollution Control Act** - protected commercial fisheries and resorts from oil pollution damage and reduced fire hazards (caused by oil) in harbors. This act was enforced by the Army Corps of Engineers and applied only to coastal waters.

1925 **The National Shellfish Sanitation Program** (NSSP) - a voluntary and cooperative program established in a conference of federal, state and municipal authorities, and representatives of the shellfish industry. A major outbreak of typhoid fever attributed to polluted oysters prompted the conference and subsequent program. The NSSP is designed to prevent human illness associated with the consumption of shellfish. The program calls for classification of shellfish waters, inspection of shellfish dealers, and issuing of public heath advisories associated with shellfish. It is supported by the 23 coastal producing states, several receiving states, foreign countries, and the shellfish industry.

1932 Committee on Disposal of Refinery Wastes created by the American Petroleum Institute. This committee, along with state agencies and other groups, devised methods of controlling refinery pollution. In 1935, the methods were published in a manual, Disposal of Refinery Wastes. These methods were gradually adopted by the refinery

industry on a voluntary basis. (Tarr, 1985b)

1938 **Federal Food, Drug, and Cosmetic Act** - regulates food, medical products, and cosmetics to ensure their safety.

1948 **Federal Water Pollution Control Act** - authorized the Surgeon General of the Public Health Service, in cooperation with other Federal, state, and local agencies, to prepare programs to reduce or eliminate pollution of interstate waterways, and improve the sanitary conditions of surface and underground waters. Since 1948, the original legislation has been amended extensively (in 1972, 1977, 1987, and 1991) to authorize additional water quality programs and fund construction grants. In 1977 it was renamed the Clean Water Act.
http://www.usbr.gov/laws/cleanwat.html

1955 **Air Pollution Control Act** - the nation's first piece of federal legislation on this issue. The language of the bill identified air pollution as a national problem and announced that research and additional steps to improve the situation needed to be taken. It was intended to make the nation more aware of this environmental hazard.
http://www.ametsoc.org/AMS/sloan/cleanair/cleanairlegisl.html

1962 *Silent Spring* by Rachel Carson (Houghton Mifflin Company, Boston) This famous book provided some of the first public evidence of how pesticides, used without proper control or knowledge, were poisoning our environment.

1963 **Clean Air Act** - This act dealt with reducing air pollution by setting emissions standards for stationary sources such as power plants and steel mills. It did not take into account mobile sources of air pollution, which had become the largest source of many dangerous pollutants. Congress began funding air quality research programs.
http://www.ametsoc.org/AMS/sloan/cleanair/cleanairlegisl.html
http://environment.about.com/library/weekly/aa062500.htm

1964 **Land and Water Conservation Fund Act** - set up a fund for acquiring new recreation lands. However, in recent years Congress has diverted a significant percentage of the fund for purposes other than conservation and recreation.
http://www.prm.nau.edu/prm346/LAWCF.htm
http://www.npca.org/media_center/factsheets/lwcf.asp

1964 **Wilderness Act** - established a National Wilderness Preservation System for the permanent good of the whole people, and for other purposes
http://www.fs.fed.us/outernet/htnf/wildact.htm

1965 **Freedom of Information Act** (FOIA)

1965 **Solid Waste Disposal Act** - legislated research, demonstrations, and training for safe disposal of solid waste. The act also had provisions to share costs with states to fund the

development of waste management plans. This legislation was amended in 1970 (Resource Recovery Act), 1976 (Resource Conservation and Recovery Act), 1980 (Solid Waste Disposal Act Amendments), 1984 (Hazardous and Solid Waste Amendments), and again in 1989 (Medical Waste Tracking Act).
http://www.cnie.org/nle/leg-8/h.html

1968 **Wild and Scenic Rivers Act** - the purpose of this act was to select certain rivers of the nation possessing remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values; preserve them in a free-flowing condition; and protect their local environments.
http://www.usbr.gov/laws/wildscen.html

1969 **National Environmental Policy Act** (NEPA) - one of the first laws written that established a broad national framework for protecting our environment. This policy established a Council on Environmental Quality (CEQ) and required all Federal agencies to complete Environmental Assessments and Environmental Impact Statements for projects.
http://www.epa.gov/region5/defs/html/nepa.htm
http://tis-nt.eh.doe.gov/oepa/law_sum/NEPA.HTM
http://ceq.eh.doe.gov/nepa/regs/nepa/nepaeqia.htm

1970 April 2 - first Earth Day

1970 **Clean Air Act** - regulated air emissions from area, stationary, and mobile sources. This law authorized the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and the environment. The Clean Air Act was amended in 1977 (to set new deadlines for NAAQS) and again in 1990.

1970 **Occupational Safety and Health Act** - ensures worker and workplace safety. Employers are required to provide their workers a workplace safe from exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. The act created the National Institute for Occupational Safety and Health (NIOSH) as the research institute for the Occupational Safety and Health Administration (OSHA) to establish standards for the workplace. OSHA, a division of the U.S. Department of Labor, enforces the standards.
http://www.epa.gov/region5/defs/html/osha.htm

1970 **Resource Recovery Act** - amendment to 1965 Solid Waste Disposal Act. The emphasis of the legislation was changed from efficiency of disposal of solid wastes to concern with reclamation of energy and materials from solid wastes. It authorized grants for new resource recovery technology and required the Environmental Protection Agency (EPA) to produce annual reports on ways to promote recycling and reduce waste. Amended in 1976 (Resource Conservation and Recovery Act) and 1984.
http://www.cnie.org/nle/leg-8/h.html

1970 December 2 - Environmental Protection Agency created by executive order of President Nixon

1971 **Lead-Based Paint Poisoning Prevention Act** - prohibits the use of lead-based paint on any cooking, drinking, or eating utensil, toys or furniture, and in residential structures constructed or rehabilitated by the Federal Government.
http://www.fda.gov/opacom/laws/leadact.htm
http://www.hud.gov/lea/leastand.html

1972 **Coastal Zone Management Act** - established a voluntary program within the Department of Commerce to encourage coastal sates to develop and implement coastal zone management plans. Funds were authorized to give cost-sharing grants to the states to develop their plans. A national system of estuarine sanctuaries was also authorized to establish national field labs. Amendments were made in 1975, 1978, 1980, and 1990.
http://laws.fws.gov/lawsdigest/coaszon.html

1972 **Federal Insecticide, Fungicide, and Rodenticide Act** - provides federal control of the distribution, sale, and use of pesticides. The Environmental Protection Agency (EPA) was given authority to study the consequences of pesticide use and to require users (farmers, utility companies, etc) to register when purchasing pesticides. Later amendments required users to take exams to certify as applicators of pesticides. All pesticides used in the U.S. must be licensed by EPA.
http://www.epa.gov/region5/defs/html/fifra.htm

1972 **Federal Water Pollution Control Act** of 1972 - amended the original legislation in 1948 and set the basic structure for regulating discharges of pollution into the nation's waters (lakes, rivers, aquifers, and coastal areas). Congress enacted this law in response to growing public concern for water pollution. It was amended and renamed the Clean Water Act in 1977, and reauthorized in 1991.
http://www.epa.gov/region5/defs/html/cwa.htm
http://www.usbr.gov/laws/cleanwat.html

1972 **Marine Protection, Research, and Sanctuaries Act (Ocean Dumping Act)** - contains permit and enforcement provisions for disposal of wastes in marine waters that are within U.S. jurisdiction. The act prohibits all ocean dumping, except that allowed by permits, and bans any dumping of radiological, chemical, and biological warfare agents and any high-level radioactive waste, and medical wastes. A number of amendments have added additional conditions: 1977 - dumping of municipal sewage sludge to cease by December, 1981; 1986 - disposal of wastes at the 12-mile site off New York/New Jersey coast be moved to a site106 miles off shore; 1988 - amendments emphasized phasing out sewage sludge and industrial waste disposal in the ocean because it did not happen despite earlier legislation; 1992 - permit states to adopt ocean dumping standards more stringent than federal standards. Other amendments provided for ocean disposal research, monitoring coastal water quality, and establishment of marine sanctuaries. Virtually all ocean dumping that occurs today is dredged material,

sediments removed from the bottom of water bodies to maintain navigation channels. The Army Corps of Engineers issues permits for ocean dumping of dredged material.
http://www.cnie.org/nle/leg-8/f.html
http://www.epa.gov/OWOW/OCPD/marine.html

1973 **Endangered Species Act** - provides a program for the conservation of threatened and endangered species and their habitats. The U.S. Fish and Wildlife Service (Department of Interior) maintains the list of endangered and threatened species.
http://www.epa.gov/region5/defs/html/esa.htm

1973 **Lead Phasedown Program** - EPA imposed the first regulation on the lead content of gasoline. The phasedown of leaded gasoline continued through the 1970s, 1980s, and ended with the ban of leaded gasoline in 1996 as stipulated in the 1990 amendments to the Clean Air Act. Unleaded gasoline was available in the 1970s.

1974 **Safe Drinking Water Act** - protects the quality of all drinking water, actual and potential, surface or underground. The act authorized the Environmental Protection Agency (EPA) to establish safe drinking water standards and requires all operators of water systems to comply with the health related standards.
http://www.epa.gov/region5/defs/html/sdwa.htm

1974 **Shoreline Erosion Control Demonstration Act** - established a national shoreline erosion control development and demonstration program. Funding was provided for planning, designing, and constructing prototype engineered and vegetative shoreline erosion control devices and methods, monitoring these prototypes, and transferring the technology to private property owners, and State and local entities.
http://www4.law.cornell.edu/uscode/33/426h.html

1975 **Hazardous Materials Transportation Act** (HMTA) - protects against "risks to life and property which are inherent in the transportation of hazardous materials in commerce." These regulations apply to any person who transports a hazardous material, or who manufactures, maintains, repairs, or tests containers which are used to transport hazardous materials.
http://tis.eh.doe.gov/oepa/law_sum/HMTA.HTM

1976 **Amendment to Coastal Zone Management Act of 1972**- established the National Estuarine Research Reserve System. The National Estuarine Research Reserve System protects and studies estuarine areas through a network of 25 reserves that represent different biogeographic regions in the United States.
http://www.ocrm.nos.noaa.gov/nerr/welcome.html

1976 **Federal land Policy and Management Act** - established public land policy and guidelines for its administration and provides for the management, protection, development, and enhancement of the public lands.
http://www.usbr.gov/laws/flpma.html

1976 **National Forest Management Act** - reorganized, expanded and otherwise amended the Forest and Rangeland Renewable Resources Planning Act of 1974, which called for the management of renewable resources on national forest lands. The National Forest Management Act required the Secretary of Agriculture to assess forest lands, develop a management program based on multiple-use, sustained-yield principles, and implement a resource management plan for each unit of the National Forest System. It is the primary statute governing the administration of national forests.
http://ipl.unm.edu/cwl/fedbook/nfma.html

1976 **Resource Conservation and Recovery Act (RCRA)** - amendment to 1970 Resource Recovery Act and1965 Solid Waste Disposal Act. This amendment made the federal government play a more active regulatory role. It gave the Environmental Protection Agency (EPA) authority to control hazardous waste from "cradle to grave." It instituted the first federal permit program for hazardous waste and prohibited open dumps. This act only concerns active or future facilities and does not address problems with abandoned or historic waste sites (see CERCLA, 1980). Amendments in 1984 and 1986 addressed other aspects of waste disposal problems.
http://www.cnie.org/nle/leg-8/h.html
http://www.epa.gov/region5/defs/html/rcra.htm

1976 **Toxic Substances Control Act (TSCA)** - gives the Environmental Protection Agency (EPA) the authority to track industrial chemicals produced or imported into the United. States. EPA can require reporting or testing of chemicals that may pose an environmental or human-health hazard, and can ban those that pose an unreasonable risk.
http://www.epa.gov/region5/defs/html/tsca.htm

1977 **Clean Water Act** - amendment to 1972 Federal Water Pollution Control Act. These amendments focused on toxic pollutants. This law gave the Environmental Protection Agency (EPA) the authority to set effluent standards for industries (technology-based) and continued the requirements to set water quality standards for all contaminants in surface waters.
http://www.epa.gov/region5/defs/html/cwa.htm
http://www.usbr.gov/laws/cleanwat.html

1980 **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)** - provided a "superfund" to clean up uncontrolled or abandoned hazardous waste sites, and accidents, spills, and other emergency releases of pollutants to the environment. The Environmental Protection Agency (EPA) was given the authority to find the parties responsible, assure their cooperation in the cleanup, and recover cleanup costs.
http://www.epa.gov/region5/defs/html/cercla.htm

1984 **Hazardous and Solid Waste Amendments (to RCRA, 1976)** - with this amendment, the federal government tried to prevent future problems by prohibiting disposal of

untreated hazardous wastes on land, setting liner and leachate collections requirements for land disposal facilities, setting deadlines for closure of land facilities that did not meet the requirements, and establishing a corrective action program for land disposal facilities. Regulations were also established for underground storage tanks. The Environmental Protection Agency (EPA) was given more authority to enforce the regulations.
http://www.cnie.org/nle/leg-8/h.html
http://www.epa.gov/region5/defs/html/rcra.htm

1986 Amendments to RCRA (1976) - enabled EPA to regulate underground storage tanks.
http://www.epa.gov/region5/defs/html/rcra.htm

1986 **Emergency Planning and Community Right-to-Know Act** (Title III of SARA, see below) - legislation to help local communities protect public health, safety, and the environment from chemical hazards. Congress required each state to appoint a State Emergency Response Commission (SERC).
http://www.epa.gov/region5/defs/html/epcra.htm

1986 **Superfund Amendments and Reauthorization Act (SARA)** - reauthorized CERCLA (see 1980) to continue to cleanup abandoned or historic hazardous wastes sites.
http://www.epa.gov/region5/defs/html/sara.htm

1987 **Water Quality Act of 1987** (Reauthorization of Clean Water Act, 1977) - established a comprehensive program for controlling toxic pollutant discharges; required states to develop and implement programs to control nonpoint sources of pollution (rainfall runoff from farm and urban areas, construction, forestry, and mining sites); authorized grants for construction of wastewater treatment facilities; created the **National Estuaries Program**; and revised many of the Act's regulatory, permit, and enforcement programs.
http://www.cnie.org/nle/h2o-15.html#_1_1
http://www.epa.gov/region5/defs/html/cwa.htm
http://www.epa.gov/owow/estuaries/

1988 **Lead Contamination Control Act (LCCA)** - authorized Center for Disease Control (CDC) to provide grants to states to administer a program for preventing childhood lead poisoning. With these grants, states were to: screen infants and children for lead; refer cases of elevated blood lead levels to the state for treatment; provide education to communities with the highest risk for elevated blood lead (above 25 jig/dL); establish programs to test and eliminate lead in water from schools and day care centers; and provide for public notification of drinking water analyses.
http://www.hud.gov/lea/leastand.html

1988 **Ocean Dumping Ban Act** of 1988 (also known as Ocean Dumping Reform Act of 1988, U.S. Public Vessel Medical Waste Anti-dumping Act of 1988, and Shore Protection Act of 1988) - amends the Marine Protection, Research, and Sanctuaries Act of 1972. Title I (Ocean Dumping of Sewage Sludge and Industrial Waste) prohibits all dumping of

sewage sludge and industrial waste into the ocean after 1991. Title III (Dumping of Medical Waste) prohibits the dumping of medical wastes into the ocean or navigable waters. Title IV (Shore Protection Act) requires that vessels carrying municipal or commercial waste within U.S. waters have a permit from the Secretary of Transportation and meet certain prescribed conditions.
http://www.senate.gov/~rpc/rva/1002/1002300.htm

1989 **Medical Waste Tracking Act** - amended the Solid Waste Disposal Act (1965) to require the Administrator of the EPA to promulgate regulations on the management of infectious waste.
http://www.epa.gov/epaoswer/other/medical/download.htm

1990 **Clean Air Act Amendment** - amended the Clean Air Act of 1970 to include problems, such as acid rain, ground-level ozone, stratospheric ozone depletion and air toxics, that were not originally addressed. Leaded gasoline to be prohibited after January 1, 1996.
http://www.epa.gov/region5/defs/html/caa.htm
http://www.epa.gov/oar/oaq_caa.html

1990 **Coastal Zone Act Reauthorization Amendments** - the Coastal Nonpoint Source Pollution Control Program (Section 6217) addresses nonpoint pollution problems in coastal waters. Section 6217 requires the 29 states and territories with approved Coastal Zone Management Programs to develop Coastal Nonpoint Pollution Control Programs.
http://www.epa.gov/owow/nps/czmact.html

1990 **The National Environmental Education Act** of 1990 - gives the U.S. Environmental Protection Agency (EPA) authority to provide national leadership to increase environmental literacy. It authorizes the EPA to: develop and disseminate environmental curricula, publications, and training programs; provide grants to educational institutions, teachers, and students; and give awards recognizing outstanding contributors in the field of environmental education.
http://www.epa.gov/region09/enviroed/
http://www.epa.gov/region01/students/index.html

1990 **Oil Pollution Act** of 1990 - strengthened the Environmental Protection Agency's (EPA) ability to prevent and respond to catastrophic oil spills. EPA has published regulations for aboveground oil storage facilities and the Coast Guard has published them for tankers. Oil storage facilities and tankers must submit plans to the federal government detailing how they will respond to large spills. A trust fund, financed by a tax on oil, is available for cleanup costs if the responsible party is unable to pay.
http://www.epa.gov/region5/defs/html/opa.htm

1990 **Pollution Prevention Act** - mandates source reduction and waste management of all toxic and hazardous substances. Beginning in 1991, the amount of toxic substances treated, disposed, recycled, recovered, or released must be reported to the Environmental Protection Agency in this effort to reduce and prevent pollution.

http://www.usbr.gov/laws/ppa.html
http://www.epa.gov/region5/defs/html/ppa.htm

1992 **Residential Lead-Based Paint Hazard Reduction Act** of 1992 (Title X of the Housing and Community Development Act) - redefines the federal response to lead poisoning by directing several federal agencies [Department of Housing and Urban Development (HUD), the Environmental Protection Agency (EPA), and the Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor] to establish a coordinated effort to reduce lead hazards in residential and commercial buildings, interior dust, and exterior soil. Some issues the act addresses are: proper training and accreditation of workers who will remove lead-based paint; disclosure by sellers of houses that have lead hazards; and establishment of unsafe levels of lead in paint, soil or dust.
http://www.hud.gov/lea/leastand.html

1996 **Land Disposal Program Flexibility Act** - amendments to 1976 Resource Conservation and Recovery Act (RCRA). This act exempts hazardous waste from RCRA regulation if the waste is treated so that it no longer is hazardous and is disposed in a facility regulated under the Clean Water Act or injected in a deep well regulated under the Safe Drinking Water Act.
http://www.cnie.org/nle/leg-8/h.html

1996 **Food Quality Protection Act (FQPA)** - amends the two major laws that governed the use of pesticides, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and Federal Food, Drug, and Cosmetic Act (FFDCA), and changes the way EPA regulates pesticides. The act requires that a new safety standard, "reasonable certainty of no harm," must be applied to all pesticides used on foods.
http://www.epa.gov/opppsps1/fqpa/index.html

1996 **Safe Drinking Water Act** - amendment to the Safe Drinking Water Act of 1974. While the original act focused on treatment as the means of providing safe drinking water, this amendment recognized the importance of protecting drinking water at the source, and providing operator training for water systems, funding for water system improvements, and public information.
http://www.epa.gov/OGWDW/sdwa/sdwa.html

1996 Use of leaded gasoline banned (see 1990 Clean Air Act Amendment).

1997 **The Food and Drug Administration Modernization Act (FDAMA)** - amends the Federal Food, Drug, and Cosmetic Act of 1938, which regulates food, drugs, biological products, medical products, and cosmetics.
http://www.fda.gov/opacom/7modact.html
http://www.fda.gov/opacom/backgrounders/modact.htm

2000 **Estuaries and Clean Waters Act** - establishes a national goal of restoring one million

acres of estuary habitat by 2010 and authorizes a total of $275 million over the next five years for matching funds for local estuary habitat restoration projects. The Act reauthorizes the National Estuary Program, the Chesapeake Bay Program, the Long Island Sound Program, and the Clean Lakes Program. This legislation also establishes an Estuary Habitat Restoration Council that is responsible for developing a National Habitat Restoration Strategy within one year, and for reviewing and establishing funding priorities among restoration projects.
http://www.epa.gov/owow/estuaries/2000bill/s835.pdf

2002 **Small Business Liability Relief and Brownfields Revitalization Act** - to provide certain relief for small businesses from liability under the Comprehension Environmental Response, Compensation, and Liability Act of 1980, and to amend such Act to promote the cleanup and reuse of brownfields, to provide financial assistance for brownfields revitalization, to enhance State response programs, and for other purposes.
http://www.epa.gov/swerosps/bf/gdc.htm#bfleg
http://www.epa.gov/swerosps/bf/sblrbra.htm

2000 **Beaches Environmental Assessment and Coastal Health Act** (BEACH) - requires all coastal states to implement a consistent and rigorous beach monitoring, closure, and public notification program based on monitoring enterococcus bacteria. EPA is to maintain a national data base of beach monitoring data.
http://library.kcc.hawaii.edu/praise/news/enviro3.html
http://www.epa.gov/ost/beaches/
http://www.epa.gov/ost/beaches/technical.html